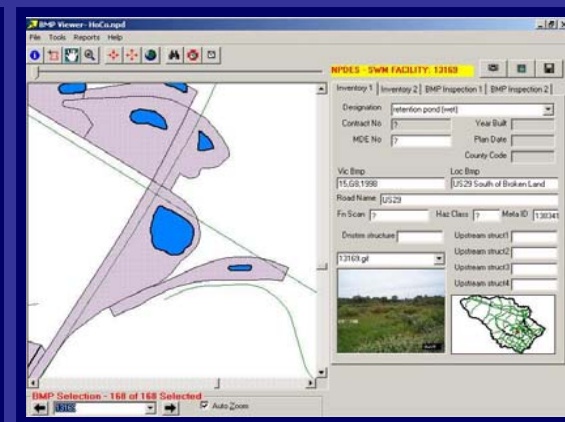
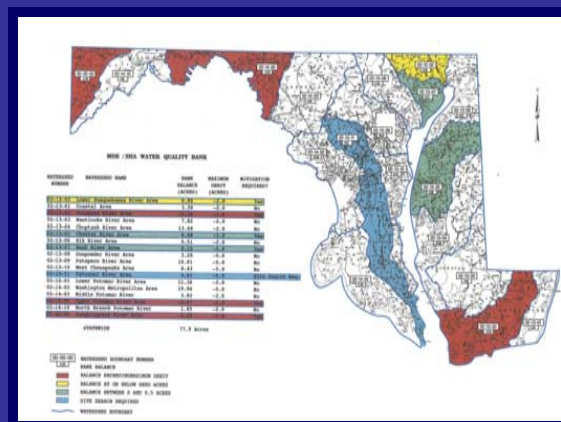


# SHA – MDE Water Quality Bank



Sonal Sanghavi, PE  
Maryland State Highway Administration

TMDL Implementation Workshop for Local Governments  
September 13, 2004



# SHA – MDE Water Quality Bank

## Goal

To establish a state-wide context for applying the Stormwater Management water quality requirements on SHA projects, and to track these projects in achieving water quality goals

Stormwater Regulations require SHA to manage the quality, *quantity* and *rate* of stormwater runoff, and groundwater recharge for new development and redevelopment projects

# Incorporated Documents

**2000 Maryland Stormwater Design Manual  
Volumes I & II, MDE - 2000**

**Maryland Stormwater Management Guidelines for  
State and Federal Projects, MDE - July 2001**

# SWM Facilities for Water Quality

- **SWM Ponds**
  - Retention (Wet) Pond
  - Extended Detention Pond with Wetlands
- **Infiltration Devices**
  - Infiltration Trench
  - Infiltration Basin
- **Wet/Dry Swales**
- **Shallow Wetland Marshes**
- **Filtration Systems**
  - Sand Filters
- **LID Practices**
  - Bioretention
- **Grass Channels**

# Water Quality Bank - Concepts

- **Agreement between SHA and MDE**
  - established in May 1992
  - updated in July 2001
- **Currency - Acres of Pavement by project**
- **For Credits:**
  - All BMPs should meet MDE requirements
  - All BMPs are treated as equal
  - Off-site and On-site pavement are considered equal (only untreated pavement)
  - Excess treatment can be credited on other projects within the same watershed
  - Non-structural BMPs do not qualify for bank credit - only project credits
- **For Debits:**
  - 20% surcharge added for all debits
  - Allows for water quality treatment at alternate locations within the same watershed
  - Bank debited only as last resort if on-site SWM is not feasible
- **Last, but actually first:**  
**“Onsite” SWM is the first priority**
- **Each watershed has established overdraft limits**
- **Mitigation required when limit is exceeded**

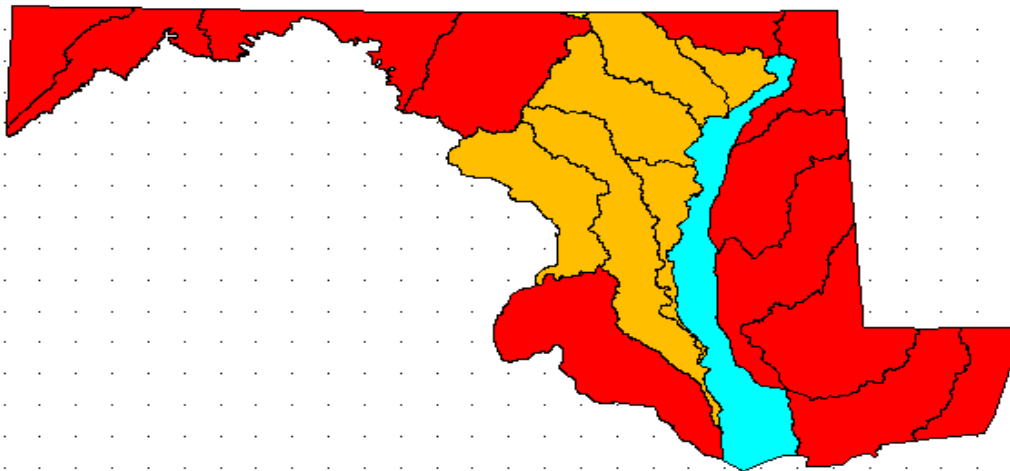
# Water Quality Bank - Process

- **Complete a Water Quality Summary Sheet for each project – even if no net credit/debit situation**
- **Submitted to MDE for review and approval as part of Project SWM Report**
- **For debits, provide justification that all other options were explored**
- **Need HHD's concurrence and MDE's approval**
- **Each transaction is entered into the bank and balance is tracked**

# Water Quality Bank

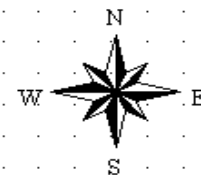
Based on MDE six digit watersheds

## Maximum WQ Debit



### Debit in Acres

Watershed.shp



# Water Quality Summary Sheet

- **Features of the WQSS**
  - **Water Quality Needed**
    - New Development
    - Redevelopment
    - Loss of Water Quality
  - **Water Quality Provided**
    - Structural BMP
    - Non Structural BMP
    - Pavement Removal



# Water Quality Summary Sheet

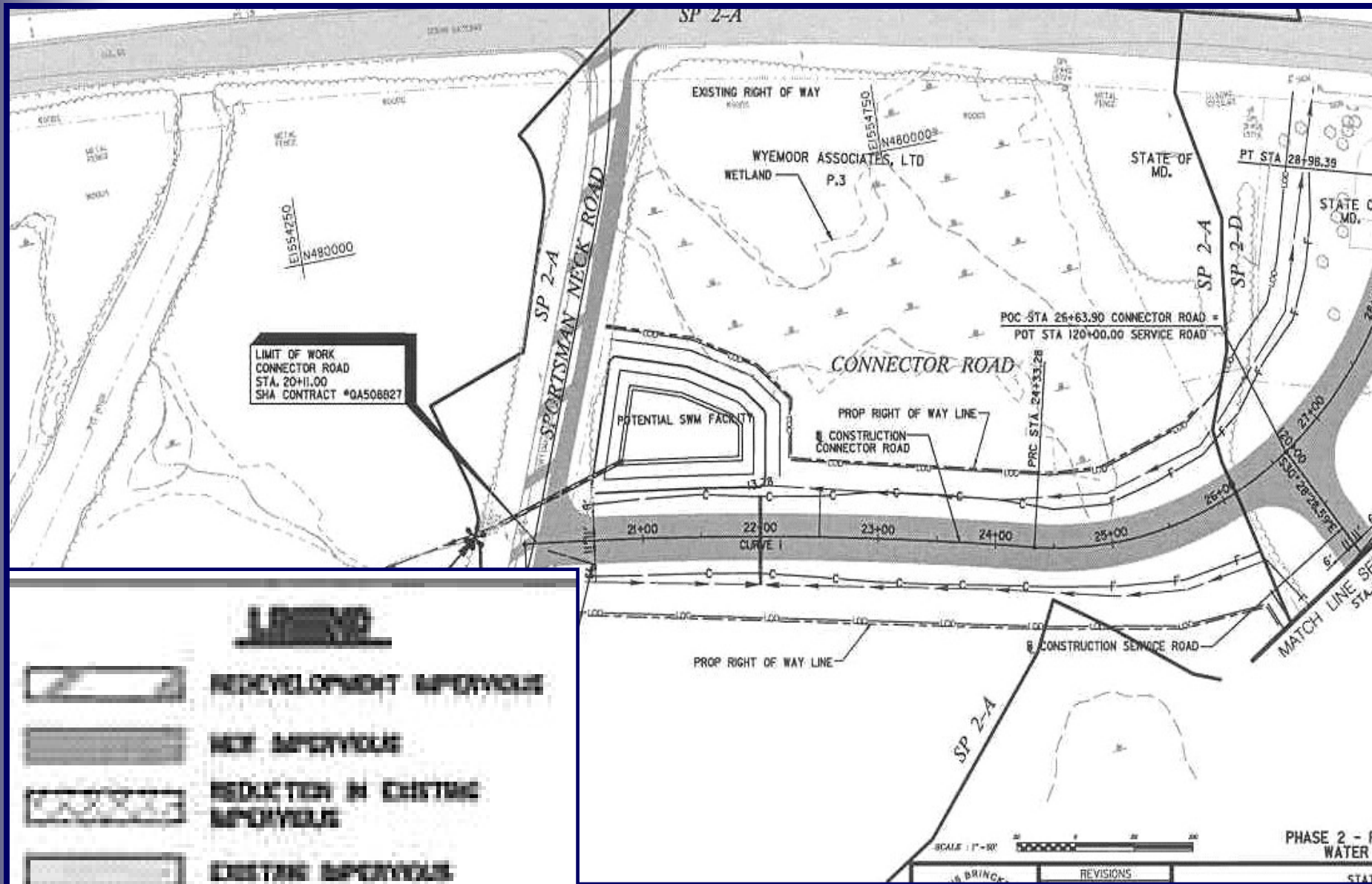
## Transactions

- **WQ for each Point of Study identified on the project**
- **Pavement Removal is considered Redevelopment**
- **Pavement Removal Credit is 80% unless demonstrated that it is removed for the sole purpose of water quality treatment**
- **Excess Grass Channel Credit is not applied to bank**
- **20% Surcharge for all bank debits**
- **BMP Number required for all structural BMPs. Applicable to existing and new BMPs**

# Water Quality Summary Sheet

[illegible]

# Standard Water Quality Map





# Map of WQ Bank Status

12

WATERSHED NUMBER	WATERSHED NAME	BANK BALANCE (ACRES)	MAXIMUM DEBIT (ACRES)	MITIGATION REQUIRED?
02-12-02	Lower Susquehanna River Area	0.00	-2.0	Yes
02-13-01	Coastal Area	3.30	-2.0	No
02-13-02	Pocomoke River Area	-2.30	-2.0	Yes
02-13-03	Nanticoke River Area	7.82	-2.0	No
02-13-04	Choptank River Area	13.68	-2.0	No
02-13-05	Chester River Area	0.08	-2.0	Yes
02-13-06	Elk River Area	0.51	-2.0	No
02-13-07	Bush River Area	0.12	-5.0	Yes
02-13-08	Gunpowder River Area	3.20	-5.0	No
02-13-09	Patapsco River Area	10.61	-5.0	No
02-13-10	West Chesapeake Area	8.43	-5.0	No
02-13-11	Patuxent River Area	0.81	-5.0	Site Search Req.
02-14-01	Lower Potomac River Area	11.36	-2.0	No
02-14-02	Washington Metropolitan Area	19.96	-5.0	No
02-14-03	Middle Potomac River	3.82	-2.0	No
02-14-05	Upper Potomac River Area	-3.07	-2.0	Yes
02-14-10	North Branch Potomac River	1.85	-2.0	No
05-02-02	Youghiogheny River Area	-2.28	-2.0	Yes

STATEWIDE

77.9 Acres

00-00-00	WATERSHED BOUNDARY NUMBER
0.00	BANK BALANCE
	BALANCE EXCEEDING MAXIMUM DEBIT
	BALANCE AT OR BELOW ZERO ACRES
	BALANCE BETWEEN 0 AND 0.5 ACRES
	SITE SEARCH REQUIRED
	WATERSHED BOUNDARY

# Next Steps to implement TMDLs at SHA

- Bank for managing new loads
- Modify Bank to meet SHA's NPDES MS4 Permit requirements for TMDLs (Presumptive BMP Approach)
  - Incorporate appropriate efficiencies for highway pollutants
    - MDE Manual BMPs
    - Stream Restoration
    - Non-structural practices (street sweeping, stormdrain cleaning, etc.)
    - Credit for treating off-site areas
    - Context-sensitive BMPs
- Stormwater Management Facilities Program
  - Construction Inspection/Certification
  - Routine Inspection
  - Maintenance
  - Remediation

# Contact Information

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